INTERLUBE
Leaders in Lubrication Solutions

Multi-Line Systems

INSTALLATION MANUAL

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Index

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Health & Safety at Work Act 1974

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This Publication covers the fitting and connecting of Interlube's range of Multi-Line Automatic Chassis Lubrication Systems
AC SERIES

FOR MORE INFORMATION ON PUMP OPERATION AND SPARES PLEASE REFER TO MULTI-LINE OPERATION AND MAINTENANCE GUIDE.

DO'S AND DON'TS

Do's

Do read all instructions before commencing installation.

Do observe safety regulations regarding operating the vehicle in confined spaces.

Do take precautions to keep all components in the system clean.

Do use existing holes in chassis for mounting where possible.

Don'ts

Don't drill any holes in chassis flanges.

Don't drill holes through any part of the vehicle until you have checked the area is free of electric cables and pipe work.

Don't drill a series of holes that may cause a weakening of the chassis.

Don't attach Interlube pipe work to the existing pipes that are subject to heat, e.g. the outlet pipe from the vehicle air compressor etc.

Don't work underneath raised body without full body props in place.

SAFETY PRECAUTIONS
(Health and Safety at work Act 1974)

Never direct High Pressure Air, Grease or Oil Delivery Nozzles at any part of the body. Always switch off and remove the fuse from the electrical supplies, uncouple pressure supplies before commencing any maintenance work. Make sure that any guards or covers removed for maintenance work are replaced before operating the equipment.

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INTERLUBE Leaders in Lubrication Solutions

1. GENERAL SYSTEM DESCRIPTION

The Interlube AC range has been designed to provide reliable and virtually maintenance free service in the most demanding applications. The system comprises an electrically operated 12/24 V pump with integral controller, and a loom of tubing which connects each chassis bearing directly to its own respective pumping unit. Each bearing is fed independently, meaning that points can be individually calibrated, and also damage to one line does not affect the rest of the system. The pumps come in two variations; the AC1 and AC2 (fig 2) which have 1 & 2 litre top fill reservoirs and have the motor and controller housed in the lid, and the AC3 (fig 1) which has a 3 litre reservoir and has the motor and controller housed in the pump base. The motor drives the impellor, which draws grease into the pumping chamber and also gives a visual indication of cam rotation. It also drives the cam, which operates the individual pumping units, and feeds grease into the tubing. The pumps can operate with a wide range of lubricants from SAE 80 oil up to and including NLGI grade 2 grease.

2. PLANNING THE SYSTEM

1. Tilt cab (where applicable).
2. Flush out all bearings to be connected to the system and clean all bearing surfaces.
3. Remove grease nipples and insert connectors to establish number of bearings to be lubricated.
4. Prepare specification sheet by listing bearings to be connected and referring to the calibration chart to determine pumping unit output recommendation.

3. PREPARING THE PUMP

Fit the pumping units into the carcass ring of the pump, taking care not to over tighten. Where spare positions occur, use blank plugs. It is recommended that where possible pumping units are spaced symmetrically around the pump and not grouped together in one area.

PUMPING UNITS

Each chassis bearing requires a measured volume of lubricant, determined by size and function. To meet this requirement INTERLUBE provides a range of six pumping units, with the outputs shown below, colour coded for easy identification during instalation, and with push-in type tubing cartridge.

Red	0.010 cc	78033
Green	0.015 cc	78034
Yellow	0.025 cc	78035
Blue	0.040 cc	78036
Grey	0.060 cc	78037
Black	0.100 cc	78038
Blanking Plug		34237-402

FIG 1

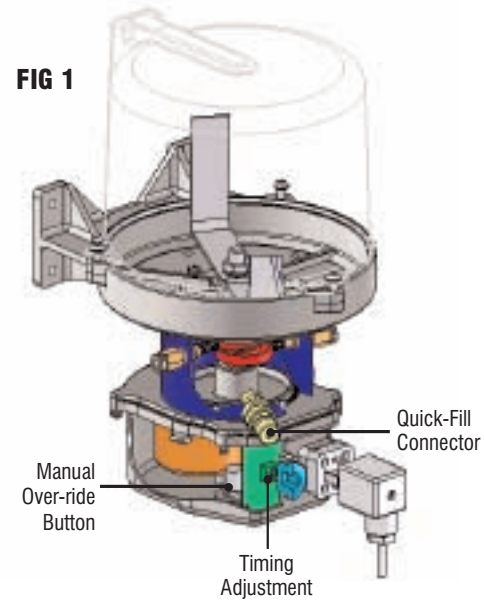


FIG 2

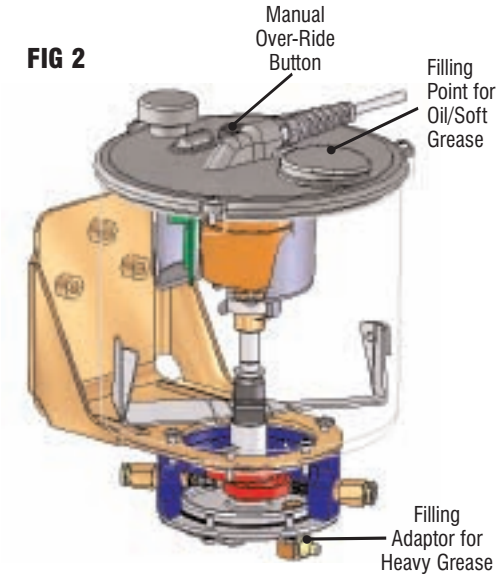


FIG 3

AC3 (3 litre Reservoir)
Maximum 60 Lubrication Points.
For more than 60 points please contact Interlube.
Operates for up to 2000 hours on each reservoir filling.

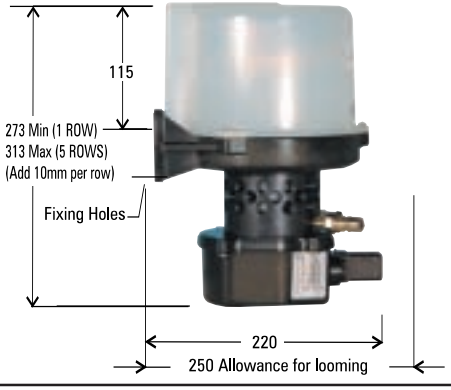
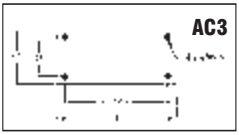


FIG 5

FIG 6

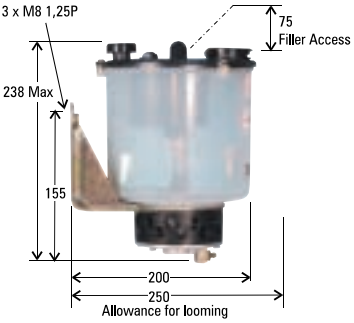


4. SITING/MOUNTING THE PUMP

Select a suitable mounting point for the pump on main chassis in a position where it is protected from debris thrown up by the wheels. Ensure adequate clearance for reservoir top-up to be achieved. Do not mount the pump onto ancillary equipment (i.e. battery covers etc).
Using the adhesive template supplied, position and drill the bracket mounting holes as shown in figs 5 & 6 (see Do's and Don'ts page 1). Using the spring washers and screw/nuts secure the pump in position.

FIG 4

AC2 (2 litre Reservoir)
Maximum 36 Lubrication Points.
Operates for up to 1500 hours on each reservoir filling.



CALIBRATION CHART

Typical Bearing Chart — Pumping Unit

Grease Systems

1.	Power Steering Cylinder Front	0.025
2.	Power Steering Cylinder Intermediate	0.025
3.	Power Steering Cylinder Rear	0.025
4.	Track Rod End	0.040
5.	Shackle Pins Front	0.040
6.	Clutch operating Shaft (Split Feed* - see note)	0.015
7.	Spring Pins	0.025
8.	Shackle Pins Rear	0.040
9.	Brake Cam Shaft Front	0.015
10.	King Pins	0.040
11.	Brake Cam Shaft Rear	0.015

*Split Feeds are only permitted on oil lubrication systems.

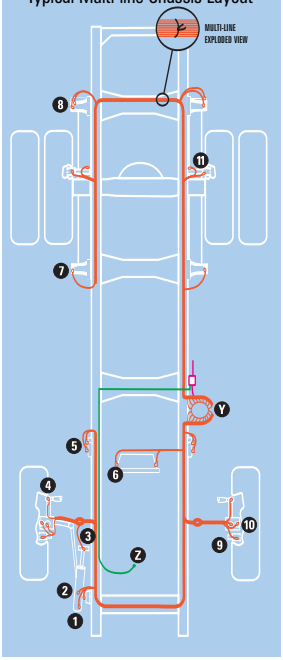
Other Bearings usually connected to the lubrication system:

Balance Beam Bearings (2 feeds)	2 x 0.040
Drag Link Ball Joint	0.040
Gear Lever Linkage	0.015
Accelerator Cross Shaft	0.015
Pedal Linkages	0.015
Brake Slack Adjusters	0.025
Tipping Body Hinges	0.025
Fifth Wheel Coupling Pivot Point	0.025
Fifth Wheel Coupling Jaws	0.025

TYPICAL MULTI-LINE CHASSIS LAYOUT

Y Pump
Z Ignition Controlled Electrical Supply

Typical Multi-line Chassis Layout



5. MAKING THE LOOMS

The loom should be formed using Interlube 4mm semi-rigid nylon tubing. It is recommended that grease filled tube is used so that the system does not have to be primed prior to operation. From the pump position ascertain the most convenient favourable route for the looms. The number of looms required will depend on pump location and quantity and positioning of grease points. Using looming stands if available, form individual tubes into a loom allowing sufficient length for connection to pump and bearings and allowing for chassis movements (e.g. springs, steering, lifts etc). In conjunction with the installation record sheet fit number identification sleeves to tubing at pump and bearing ends. The loom should be protected along its length with the conduit/spiral binding/sleeving, and/or tape (for part numbers see section 11 Accessories) The loom can consist of tubes of varying lengths which can leave the loom at the required point (fig 7).

6. FITTING THE LOOMS

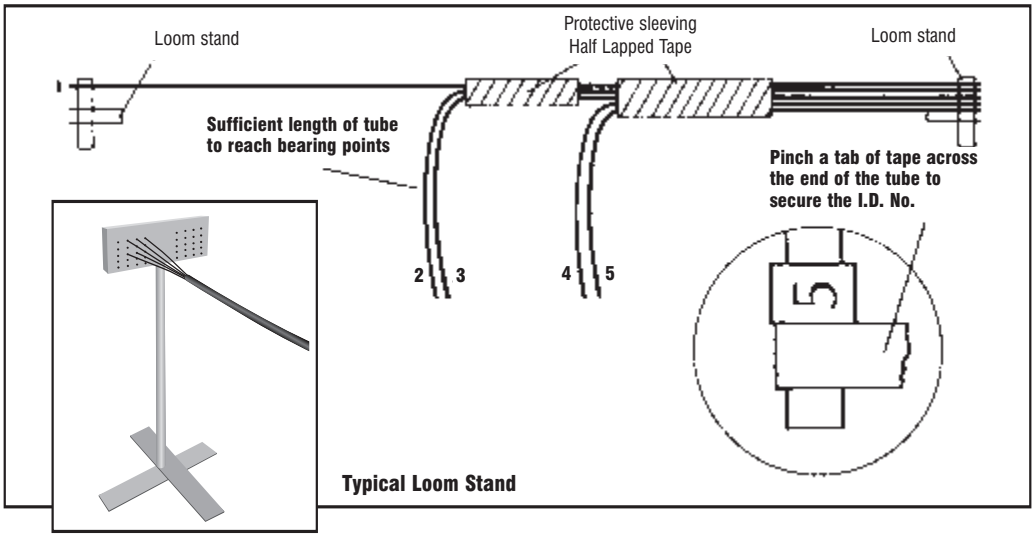
Working from the furthest point from the pump, feed the loom through the chassis following existing vehicle services where possible (see do's and don'ts page 1). Ensure tubes are positioned to fit bearing connectors. Where bearing is on a moving part, ensure tube length is sufficient to allow for full movement. To avoid rubbing or friction with chassis, grommets or protective sleeving should be used.

7. CONNECTING THE LOOMS

Cut each tube to length ensuring a clean square cut is achieved, and connect to bearing using push fit connectors. ENSURE TUBING IS PUSHED FIRMLY INTO CONNECTOR. TEST ASSEMBLY BY PULLING FIRMLY ON THE TUBE. Using System Specification Sheet connect the loom to corresponding numbered pumping units. When running the tubing into the pumping units, to give the loom strength and rigidity, the tubes should be clipped together to form an arrangement as shown in fig (8) below. The starting point for the loom can be as required. On the underside of the AC2 a mark indicates a suggested starting point. Starting with the bottom row of outlets, and pumping unit 1, the loom should then run right around the pump, then on to connect with the next row of pumping units so that the loom takes the form of a spiral, and so on until all pumping units are connected. Alternatively the pump units in all rows can be connected by working around the pump ring, but the loom should still be formed as per fig 8. Alternatively the loom can be run in the opposite direction. Approximate distance of the loom from pump should be approx 60mm. Tubes should be clipped together every 6 pump units. The loom/looms can then be routed on to the chassis as required.

FIG 8

FIG 7



8. ELECTRICAL CONNECTIONS

Connect the twin core cable via an in line fuse (2Amin/5A max) to an ignition controlled circuit. See figures 9 & 10.

9. TESTING THE SYSTEM

With the ignition ON, check that the indicator light is illuminated (see figures 11 & 12). Operate the manual override button, and check for paddle rotation. The indictor light should flash slowly. NB. Should the motor fail, it will be indicated by a fast flash.

10. TIMER ADJUSTMENT

AC1 / AC2

The pump cycle time can be changed from the factory set option if required. There are four settings as listed below and show the cycle time including 2.5min run time and delay period. The rotary timer is on the PCB which is inside the motor housing. This is accessed by removing the lid, and opening the motor housing.

The switch positions are:-

0- Continuous (2.5 min cycle time)
1- 9 minutes cycle time
2- 12 minutes cycle time
3- 15 minutes cycle time

AC3

The pump is available with 10 settings with the delay timing control via a rotary switch located behind a screw cap at the front of the motor housing. The motor runs for 1 minute and 8 seconds.

Switch positions:-

0 – continuous double speed (1.8 RPM)
1 – continuous at normal speed (0.9RPM) normal trailer applications.
2 – 3 minute delay (4 minute total cycle time)
3 – 7 minute delay (8 minute total cycle time)
4 – 11 minute delay (12 minute total cycle time)
5 – 15 minute delay (16 minute total cycle time)
6 – 19 minute delay (20 minute total cycle time)
7 – 24 minute delay (25 minute total cycle time)
8 – 30 minute delay (31 minute total cycle time)
9 – 36 minute delay (37 minute total cycle time)

FIG 9

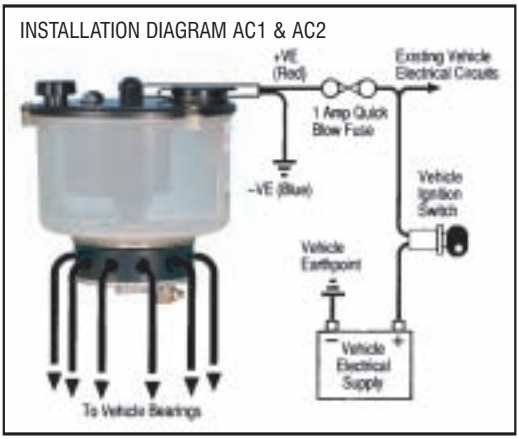


FIG 10

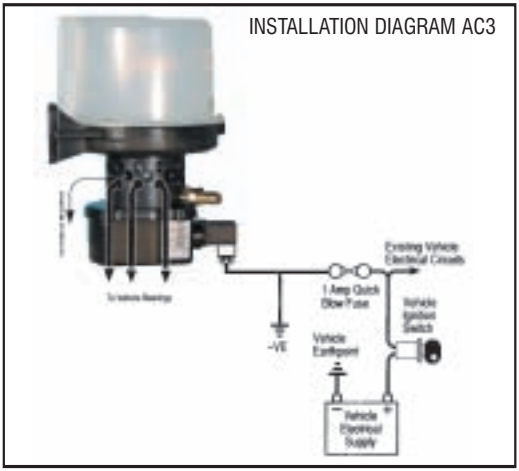


FIG 11

FIG 12

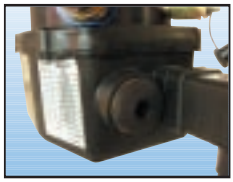


FIG 11

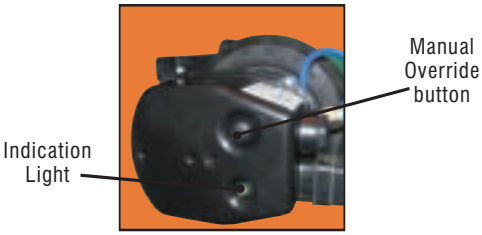
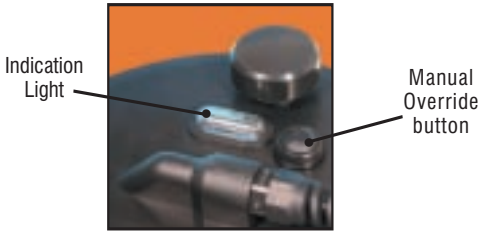


FIG 12



11. ACCESSORIES

ELBOW CONNECTORS

Elbows

Part Number	Thread Size
PM90412	1/8 PTF SAE
PM90484	1/4-28UNF
PM90485	5/16-24UNF
PM90487	1/8 BSPT
PM90489	M6X1P
PM90490	M8X1P
PM90491	M8X1,25P
PM90492	M10X1P
PM90493	M10X1,5P

STRAIGHT CONNECTORS

Straight Connectors

Part Number	Thread Size
PM80412	1/8 PTF SAE
PM80484	1/4-28UNF
PM80485	5/16-24UNF
PM80487	1/8 BSPT
PM80489	M6X1P
PM80490	M8X1P
PM80491	M8X1,25P
PM80492	M10X1P
PM80493	M10X1,5P
25478-056	4mm to 4mm

ACCESSORIES

152823/25 .....4mm OD soft grease filled tube x 25M
152823/50 .....4mm OD soft grease filled tube x 50M
152821/25 .....4mm OD Heavy grease filled tube x 25M
27233-507 .....Cable ties

OA50397/1 2 off Numbered sleeves 1 – 12
OA50397/2 2 off Numbered sleeves 1 – 24
OA50397/3 2 off Numbered sleeves 1 – 36
OA50397/4 2 off Numbered sleeves 1 – 48
OA50397/5 2 off Numbered sleeves 1 – 60

LOOMING ACCESSORIES

Plastic tape 1" Black 1755-830
Spiral Binding (1-2 lines). 1837-001
Spiral Binding 8mm I/D (3-4 lines) 1837-002
Spiral Binding 10mm I/D (5-7 lines) 1837-003
Spiral Binding 14mm I/D (8-12 lines) 1837-004
Conduit 7mm diameter. 27315-707
Conduit 10mm diameter. 27315-710
Conduit 12mm diameter. 27315-712
Conduit 17mm diameter. 27315-717
Split Conduit 7mm diameter 27315-907
Split Conduit 10mm diameter 27315-910
Split Conduit 12mm diameter 27315-912
Split Conduit 17mm diameter 27315-917

GREASE

Premium Grade NGLI 000 / FG3,0

25717-284	12 x 1 Litre
Bottles	
25717-284 / 12.5K	12.5 KG Pail
25717-284 / 25K	25 KG Pail
25717-284 / 50K	50 KG Pail
25717-284 / 180K	180 KG Pail

NLGI Grade 2

25717-270 / 12.5K	12.5 KG Pail
25717-270 / 25K	25 KG Pail

GREASE SPECIFICATIONS

NGLI 000 / FG3,0

Colour .....Amber
Texture.....Fluid, Tacky
NLGI.....000
Soap Type .....Calcium
Penetration @ 25°C.....445-475
Base Viscosity @ 40°C .....35 to 45 CST
Drop Point .....N/A

NLGI Grade 2

Colour .....Pale Amber
Texture.....Slightly Fibrous
NLGI.....2
Soap Type .....Lithium
Penetration @ 25°C.....265-295
Base Viscosity @ 40°C 125cSt
Drop Point .....185°C

MULTI-LINE INSTALLATION RECORD

Vehicle Type .....

Customer .....

.....

Pump No .....

Voltage .....

Timer Settings .....

SYSTEM TYPE

AC1	AC2	AC3

SYSTEM SPEC' SHEET

Unit No.	Bearing Lubricated	Col. Code	Cal cc.
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
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27			
28			
29			
30			

Unit No.	Bearing Lubricated	Col. Code	Cal cc.
31			
32			
33			
34			
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41			
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Installed by ..... Date .....